REMARKS

I. Status of the Application

Claims 1-11, 13-15 and 17-22 are all the claims pending in the present application. With regard to the Amendment filed August 29, 2007, the Examiner has indicated that claims 1-11, 13-15 and 17-22 are allowable over the prior art of record. Thus, non-elected claims 18-22, which were previously withdrawn by the Examiner, have been rejoined to elected claims 1-17.

II. Drawing Objections

The Examiner has objected to drawings because the drawings allegedly fail to show figures 1, 2, 4, 6, 7, 11, 12, 15 and 22, as referenced in the specification. Further, the Examiner maintains that element S43 of Figure 11(B), and elements 31a-31e of Figure 15(A), have not been mentioned in the specification. Applicant is submitting a substitute specification which is believed to overcome the drawing objections. Applicant further submits a redlined version of the specification. No new matter is added.

III. Objections to the Specification

The Examiner maintains that the references to the claims on various pages of the specification is confusing because the referenced claims may be cancelled or renumbered. As noted above, Applicant is submitting a substitute specification, which does not contain references to the claims.

The Examiner further maintains that the specification fails to show "Expression (3)", "Expression (4)", "Expression (5)", and "Expression (6)". Applicant submits that "Expression (3)" is shown on page 50 as designated with the label "(3)", "Expression (4)" is shown on page

51 as designated with label "(4)", "Expression (5)" is shown on page 54 as designated with label "(5)", and "Expression (6)" is shown on page 56 as designated with label "(6)".

Lastly, the Examiner maintains that the specification lacks the allegedly required phrase "We claim." The substitute specification contains the allegedly required phrase.

IV. Claim Rejection under 35 U.S.C. § 101

Claims 1-11, 13-15 and 17-22 have been rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Applicant respectfully traverses the rejection as follows.

A. Claim 1

With regard to claim 1, the Examiner concedes that claim 1 is directed to a method comprising a sequence of steps that when taken as a whole provide the useful and beneficial function of determining the twist angle of a wire-like structure. *See* Office Action at page 4. However, the Examiner maintains that "one of ordinary skill at the time the invention was made could [have] interpreted claim 1 when taken as a whole as being directed to nothing more than a process for the abstract manipulation of data/information without a claimed application of the results of the manipulation or claimed requirement that any of the cited structures or actions are present or would perform any function for any purpose not related to the manipulation of data/information." *See* Office Action at page 8.

Section 2106.IV.C(2) of the MPEP details the review that should be made to determine whether a claimed invention falls within one of the 35 U.S.C. § 101 judicial exceptions, since claims directed to nothing more than abstract ideas (such as mathematical algorithms), natural

phenomena, and laws of nature are not eligible for patent protection. However, Section 2106.IV.C of the MPEP further states that while abstract ideas, natural phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, natural phenomena, and laws of nature to perform a real-world function may well be. More specifically, "[f]or claims including such excluded subject matter to be eligible for patent protection, the claim must be for a practical application of the abstract idea, law of nature, or natural phenomenon. *Diehr*, 450 U.S. at 187, 209 USPQ at 8 ('application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.')." MPEP § 2106.IV.C(2). "A claimed invention is directed to a practical application of a 35 U.S.C. 101 judicial exception when it:

(A) 'transforms' an article or physical object to a different state or thing; or

(B) otherwise produces a useful, concrete and tangible result."

MPEP 2106.IV.C.2.

In determining whether the claimed invention produces a useful, concrete and tangible result, the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather on whether the final result achieved by the claimed invention is useful, tangible, and concrete.

For an invention to be useful, it must have specific, substantial and credible utility. MPEP § 2106.IV.C(2). As noted above, the Examiner concedes that the disclosure presents a disclosed substantial and credible utility for the invention of claim 1 as a method comprising a sequence of steps that when taken as a whole provide the useful and beneficial function of

determining the twist angle of a wire-like structure. *See* Office Action at page 4. Thus, Applicant submits that claim 1 is directed to a method that clearly produces a useful result.

The requirement that the invention produce a tangible result "does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. § 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result." MPEP 2106.IV.C(2).

Independent claim 1 is directed to a method of calculating a twist angle in a wire-like structure, wherein the wire-like structure includes a main wire bundle, the a sub-wire bundle that branches off from the main wire bundle, and/or a clamp that is attached to the main wire bundle. Thus, the claimed method has many practical applications in which a wire-like structure is used in a predetermined three-dimensional space such that a twist in the wire-like structure would occur. The method of calculating the twist angle of claim 1 would allow one to calculate the twist angle of a wire-like structure before installing the wire-like structure in the predetermined three-dimensional space. Accordingly, Applicant submits that the method of claim 1 clearly sets forth a practical application that produces a real-world result.

Lastly, the claimed invention must produce a concrete result. In other words, the process must have a result that can be substantially repeatable or the process must substantially produce the same result again. MPEP 2106.IV.C(2). Applicant submits that the claimed method of

calculating a twist angle of a wire-like structure is clearly repeatable for various wire-like structures, such that the method of claim 1 produces a concrete result.

Therefore, since the method of claim 1 produces a useful, tangible and concrete result, Applicant submits that the claimed method is directed to a practical application of an abstract idea, law of nature, or natural phenomenon, such that it is eligible for patent protection. Furthermore, claim 1 recites, *inter alia*, "a twist angle outputting step of outputting the twist angel." At least this claim feature sets forth a practical application that produces a real-world result. *See* MPEP 2106.IV.C(2). Accordingly, Applicant submits that the rejection under 35 U.S.C. § 101 is improper for at least the foregoing reasons.

B. Claims 2-11, 13-15 and 18-22

Since claims 2-11, 13-15 and 18-22 contain features similar to those discussed above in conjunction with claim 1, Applicant submits that such claims are patentable for at least reasons similar to those set forth above with regard to claim 1.

With further regard to claims 13, 17 and 22, the Examiner maintains that such claims are directed to a storage device containing "program" or "code" or "instructions" *per se* as set forth by Applicant in the preamble and hence these claims recite steps/actions that are intended to perform the associated functions without a positive recitation of a structure or action that one of ordinary skill at the time the invention was made would recognize as being capable of achieving the recited functions and hence the recited invention when taken as a whole does not define either a process or machine. *See* Office Action at page 30. The MPEP defines functional descriptive material as consisting of data structures and computer programs which impart

functionality when employed as a computer component, while nonfunctional descriptive material includes music, literary works, and a compilation or mere arrangement of data. MPEP § 2106.01. Although both types of descriptive material are non-statutory when claimed as descriptive material *per se*, when functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. MPEP § 2106.01. As discussed above with regard to claim 1, the method of claim 1 produces a useful, tangible and concrete result. Since the computer-readable medium of claims 13, 17 and 22 contain a computer-executable program that accomplishes a similar function as the process of claim 1, Applicant submits that claims 13, 17 and 22 are patentable for at least the foregoing reason.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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